

## **REMARKS**

The present application is directed to methods of cloning genes using replication-deficient baculovirus vectors. Prior to this Amendment and Response, Claims 27-34 were pending. In the present Amendment and Response, applicants amend Claims 31 and 32. The amendments do not introduce any new matter. Upon entry of the present amendment, Claims 27-34 will be pending.

### **Summary of Record of Interview on May 11, 2006**

Applicants and applicants' representatives very much appreciate the personal and constructive interview with Examiner Maria Marvich and Daniel Sullivan on May 11, 2006. Figure 2 was discussed in terms of adding the appropriate sequence identifiers. The outstanding 35 U.S.C. § 112, first paragraph rejection of Claims 27-32 was discussed. Also discussed was the outstanding 35 U.S.C. § 103 rejection of Claims 27-34 in view of the cited art. Applicants wish to correct a typographical error on the Interview Summary that John K. McDonald, and not John Marshall, was present at the interview.

### **Sequence Compliance**

Figure 2 has been amended to insert sequence identifiers. Applicants respectfully assert that the application is now in compliance with the requirements of 37 CFR 1.821 through 1.825. Figure 2(a) includes SEQ ID NO: 23 as filed in the Sequence Listing. Figure 2(b) includes SEQ ID NO: 25 as filed in the Sequence Listing with an additional TAATAAA on the 3' end. The concurrently filed revised Figure 2 contains these sequence identifiers.

### **Claim Rejections under 35 U.S.C. § 112, first paragraph**

Claims 27-32 are rejected under 35 U.S.C. § 112, first paragraph, as not enabled for a method of cloning a gene comprising providing a naked circular replication

deficient baculovirus vector that lacks *p35*. Claims 31 and 32 are amended to delete *p35*. Applicants respectfully assert that the rejection has been overcome and request its withdrawal.

**Claim Rejections under 35 U.S.C. §103(a)**

Claims 27-34 are rejected under 35 U.S.C. §103(a) as unpatentable over U.S. Patent No. 6,911,206 to Campos et al. (35 U.S.C. §102(e)) in view of U.S. Patent No. 5,348,886 to Lee et al., and further in view of Merrington et al., *Virology*, v. 217, pp. 338-348 (1996).

Applicants respectfully traverse this rejection. The publications do not render Claims 27-34 obvious at least because the pending claims recite a circular, replication-deficient vector. The references, alone or in combination, do not teach, suggest or provide motivation to use a circular replication-deficient vector. Thus, the references, alone or in combination, do not teach or suggest all elements of the pending claims and do not render them obvious.

***Campos***

The Examiner asserts in column 33, line 35 through column 34, line 36 (Example 4), that Campos disclose a naked replication-deficient baculovirus vector and a transfer or rescue vector comprising genes to complement for replication deficiency. Since Campos do not teach linearization of the replication-deficient baculovirus vector, the Examiner presumes that it is circular.

Campos teaches at column 19, lines 57-61, that “viruses suitable for expression in the eukaryotic cells can be ascertained by those of ordinary skill in the art.” Baculoviruses known to those of ordinary skill in the art were ascertained by the Examiner during earlier stages in the prosecution of the present application. In previous responses (for example in the responses and declarations filed October 21, 2005 and January 26, 2005), Applicants distinguished their claimed method, employing naked, circular, replication-deficient baculovirus vector from other methods known to those of

ordinary skill in the art at the time of filing the present application. Thus, Applicants respectfully assert that their claimed method is novel and non-obvious over methods employing viral vectors as disclosed in the cited art or as known generally to those of ordinary skill in the art at the time of filing the present application

Applicants assert that Campos, in fact, discloses a replication-deficient viral DNA that needs to be linearized. Use of the Clontech BacPAK system is taught in all specific examples of baculovirus expression provided in Campos {see Column 20, lines 10-14: examples of transfer vectors are pBacPAK8 and pBacPAK9 (Clontech), or pBAK-based fusion vector; Column 33, Example 4: The transfer vector used to place the foreign coding regions under control of the polyhedrin gene promoter was pBacPAK9 (Clontech); Column 33, Example 4: Campos et al used the replication-deficient virus DNA that contains “homologous flanking viral sequences present in pBacPAK9.” from the same company to make their viruses.}

The BacPAK system uses linearized viral DNA (evidenced by Clontech materials provided herewith as Exhibit A). The target gene is inserted into a transfer or shuttle vector, which is cotransfected into insect host cells with the linearized BacPAK6 viral DNA. Clontech provides BacPAK6 in a linearized form. Accordingly, Campos teaches using linearized viral DNA. Campos does not teach, suggest, or provide motivation to use any other DNA, including the circular, replication-deficient vector employed by Applicants.

The BacPAK6 system was described in Kitts et al. (Biotechniques 14: 810-817). Applicants previously overcame rejections over Kitts and distinguished this system from the presently claimed system (for example in the responses and declarations filed October 21, 2005 and January 26, 2005). Nevertheless, a the summary of the unexpected advantages follows:

a) Column 33, lines 59-60: “Recombinant virus can be purified by plaque assay from infected Sf21 cells”. When using BacPAK6 to make recombinant viruses, the mixture of viruses produced after transfection of insect cells is titrated in Sf21 cells to remove

contaminating parental virus — i.e. to remove any remaining contaminating circular virus. An important feature of the present invention is that it is not necessary to use a plaque assay to derive recombinant virus because there is no contamination by the parent virus due to undigested viral DNA.

b) See Kitts & Possee describing the derivation of BacPAK6. Robert Possee, an inventor of the present invention, invented BacPAK6 and clearly understands its limitations.

c) Page 816, column 1: for BacPAK6, a median of 95% of the non-parental plaques are recombinant, as compared to almost 100% efficiency of the present invention (supported by previous declarations filed October 21, 2005 and January 26, 2005).

d) Applicants previously successfully argued and supported with the Declarations with respect to Clark (U.S. 6,225,060), that the technique of Kitts et al., requires that virus DNA is digested prior to use in order to generate linearized DNA. This linearized DNA is used to make recombinant viruses and yields such recombinant viruses at a frequency of 85-99%. About 10% of the viruses are parental in origin. The authors of the Clark patent attribute the majority of the contamination to undigested virus DNA. The method of Kitts et al. embodied in the commercial BacPAK system used in Campos will always leave some DNA intact as an infectious circular molecule. The undigested circular molecule is not replication-deficient and consequently will produce contaminant parental virus. This DNA will initiate infection in insect cells and will produce background virus without the insertion of a foreign gene. Accordingly, the method of Kitts et al. requires multiple screening steps need to be carried out to remove contaminant parental virus.

e) An advantage of the present invention is that the parental virus is maintained in bacterial cells and has part of the ORF1629 already removed from the virus genome. This DNA can be used to co-transfect Sf9 cells in a circular state without a requirement for pre-digestion with a restriction enzyme. Therefore, in Applicants' method, the parental genome does not contaminate the recombinant virus stocks. The extremely high efficiency of the current system removes the need for multiple screening steps.

For at least the reasons recited above, Campos only teaches the use of BacPAK (linearized DNA) and could not be interpreted to include the naked, circular, replication-deficient baculovirus vector recited in Applicants' claims. Accordingly, Applicants assert that Campos, alone or in combination with Lee or Merrington does not teach, suggest, or provide motivation to derive the naked circular replication-deficient vector used in the claimed method. Applicants respectfully assert that the rejection of rejection of Claims 27-34 under 35 U.S.C. §103(a) has been overcome and request its withdrawal.

*Lee*

The Examiner asserts that Lee disclose a baculovirus that can be maintained in bacterial cells by insertion of a bacterial replicon and a selectable drug-resistance marker. Applicants assert that Lee teaches the use of bacteria to produce recombinant baculoviruses by performing a transposition event in the bacterial cell, prior to recovering DNA from these cells for re-infection of insect cells. These vectors are not replication-deficient in insect cells, and replication-deficiency will not provide any advantage as the selection of the recombinant vectors is carried out in bacteria through bacterial markers. See column 3, summary. Thus, Lee, alone or in combination with Campos or Merrington does not teach, suggest, or provide motivation to derive the naked circular replication-deficient vector used in the claimed method and does not render obvious the claimed method.

*Merrington*

The Examiner asserts that Merrington teaches a lef-2 mutation can be rescued by co-transfection of unmodified lef-2. The vector in Merrington shows significant rates of replication (see Figure 5) and is therefore not replication-deficient as recited in the pending claims. The inventors of the present application are co-authors of Merrington and consequently are familiar with its contents. The experimental data in Merrington show that the virus still produces over 5 million infectious particles per ml of cell culture medium. In contrast, in the present invention, the replication deficient virus produces no infectious progeny unless rescued by a transfer vector. Since the vector in Merrington shows significant rates of replication and is not replication deficient, as claimed,

Applicants respectfully assert that Merrington, alone or in combination with Campos or Lee does not render the present invention obvious.

In view of the foregoing comments, applicants respectfully assert that the claimed invention is patentable in view of the cited references. Applicants believe the rejection of Claims 27-34 under 35 U.S.C. §103(a) has been overcome and request its withdrawal.



## **CONCLUSION**

Applicants respectfully submit that this is a complete response to the Office Action dated January 13, 2006. Applicants respectfully assert that the claims are now in condition for allowance and request that the application be passed to issuance. If the Examiner believes that any informalities that may be corrected by Examiner's amendment remain in the case, or if there are any other issues which can be resolved by a telephone interview, a telephone call to the undersigned attorney at (404) 745-2470 is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John K. McDonald".

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# BacPAK™ Baculovirus Rapid Titer Kit User Manual

Cat. No. 631406  
PT3153-1 (PR621452)  
Published 30 March 2006

EXHIBIT A



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## I. Introduction

The BacPAK™ Baculovirus Rapid Titer Kit provides a quick method for determining titers of baculovirus stocks, typically the most time-consuming part of baculovirus expression protocols. In conjunction with the BacPAK Baculovirus Expression System (Cat. No. 631402) or any AcMNPV-based baculovirus system, this kit can reduce the total time needed to express proteins by as much as six days. The Rapid Titer immunoassay utilizes a standard immunoassay for a viral envelope glycoprotein to accurately identify virally infected cells in only two days—well before plaques can be detected in standard plaque assays (Figure 1).

### Benefits of the BacPAK™ Rapid Titer Kit

Viral infection at the correct multiplicity of infection is critical to achieving optimal protein yields with baculovirus gene expression. There are some drawbacks to common titrating methods, including plaque and endpoint dilution assays: these assays generally take 5–8 days and require extensive baculovirus experience to perform. In contrast, the Rapid Titer Kit is a standard immunological assay (Figure 2) which takes only two days. Infected cells express viral antigens long before plaques are formed, so titers are determined by antibody detection of those antigens after a much shorter incubation period (Volkman & Goldsmith, 1982). Furthermore, the titers obtained with this kit are comparable to those obtained with traditional methods such as the plaque assay and endpoint dilution assay (Figure 3).

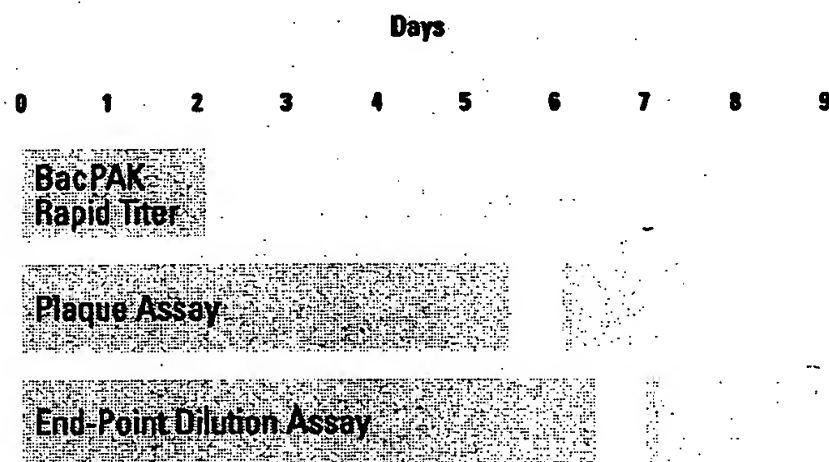


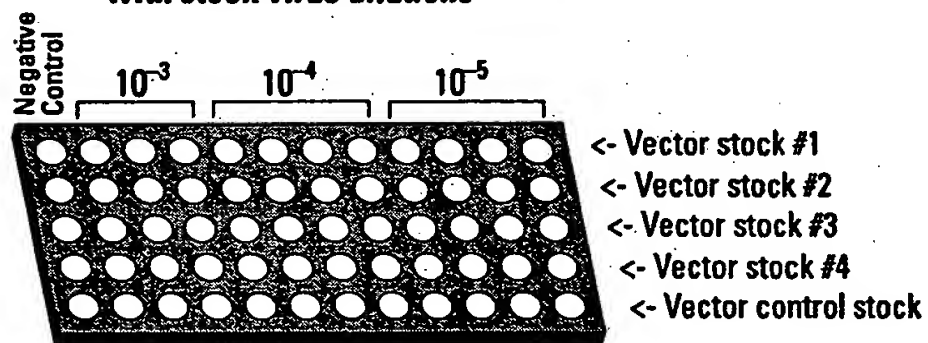
Figure 1. The Rapid Titer assay is significantly faster than other baculovirus titrating methods.

## I. Introduction *continued*

Seed rows of 96-well plate  
with early log-phase cells  
(Sf21, Sf9 or any insect cell line)

Incubate for 1 hr

Infect 1 row of plate per titration\*  
with stock virus dilutions



1. Incubate for 1 hr
2. Remove virus inoculum
3. Add methyl cellulose overlay
4. Incubate for 45 hr

### Immunoassay

1. Fix cells
2. Detect with Antibodies
3. Stain cells
4. Count foci of infection

**Figure 2. Flowchart of the BacPak™ Rapid Titer assay procedure.**

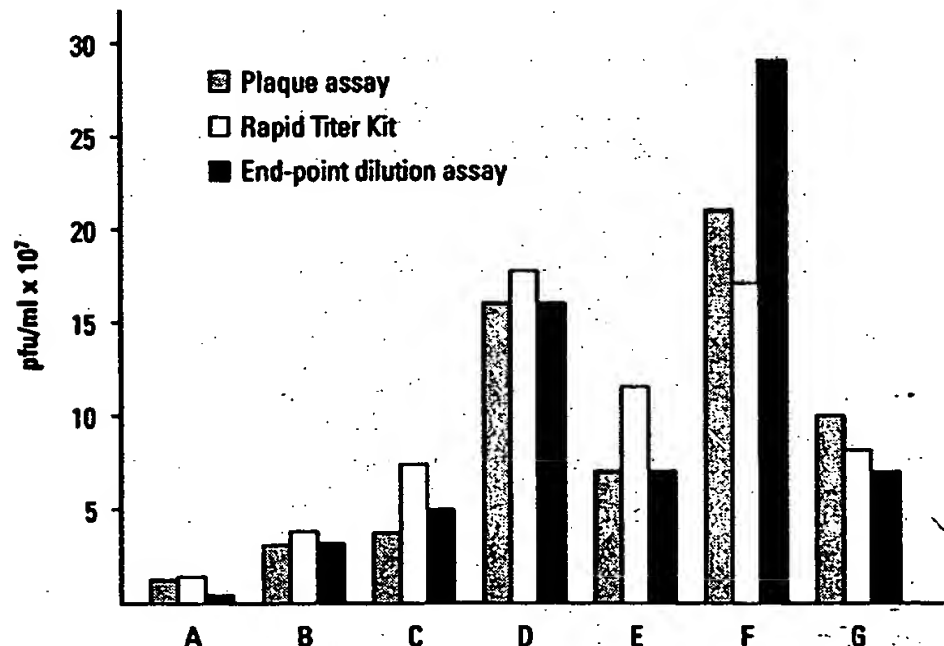
\*Sufficient reagents are supplied for 5 titrations (60 wells).

## I. Introduction *continued*

In this titrating method (Figure 2), a primary monoclonal antibody raised to an AcMNPV envelope glycoprotein (gp64) labels infected cells in replicate samples. A secondary HRP-conjugated antibody stains the infected cells so the number of infected foci can be counted under light microscopy. Then the titer can be determined since the number of infected foci corresponds to the multiplicity of infection. Assaying multiple wells at the same viral concentration is essential since there may be a slight well-to-well variation. The Rapid Titer Kit provides sufficient reagents for performing five assays (one assay is 12 wells in a 96 well plate), and is suitable for titrating any virus stock with a titer of more than  $10^4$  pfu (plaque-forming units)/ml. The gp64 antibody is only available as part of the Rapid Titer Kit.

### The BacPAK™ System

The BacPAK Baculovirus Expression System (Cat. No. 631402; Kitts, 1992) routinely delivers protein expression of 10–100 mg/L and features BacPAK6, a specially engineered viral DNA (Kitts & Possee, 1993) that facilitates the construction and selection of recombinant expression vectors at frequencies >90%. We offer a complete line of BacPAK baculovirus products that are compatible with most other baculovirus expression systems.



**Figure 3. Comparison of viral titrating methods.** Viral titers obtained with BacPAK™ Rapid Titer method are similar to titers obtained with other assay methods. Seven virus stocks with titers between  $1 \times 10^7$  and  $3 \times 10^8$  plaque forming units (pfu)/ml were harvested at different times and assayed in parallel with the Baculovirus Rapid Titer Kit, plaque assay, and endpoint dilution assay (O'Reilly et al., 1992). Stock type: A: AcMNPV; B: BacPAK6 Virus; C: AcMNPV; D: BacPAK6 Virus; E: BacPAK6 Virus; F: BacPAK6 Virus; G: BacPAK6 Virus.

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## II. List of Components

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Store Goat Anti-Mouse Antibody/HRP Conjugate and Normal Goat Serum at  $-20^{\circ}\text{C}$ .

Store Control Baculovirus at  $-70^{\circ}\text{C}$ .

Store Mouse gp64 Antibody, Blue Peroxidase Substrate and Methyl Cellulose Overlay at  $4^{\circ}\text{C}$ .

- 13  $\mu\text{l}$  Mouse gp64 Antibody
- 30 ml Goat Anti-Mouse Antibody/HRP Conjugate
- 4 ml Blue Peroxidase Substrate
- 4 ml Methyl Cellulose Overlay
- 2 Resealable Plastic Bags
- 0.5 ml Normal Goat Serum
- 0.2 ml Control Baculovirus

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## III. Additional Materials Required

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- **Phosphate buffered saline (PBS)** with  $\text{CaCl}_2$  and  $\text{MgCl}_2$  (Sigma, Cat. No. D8662)
- **Formyl buffered acetone (Ice-cold)**  
Prepare in a glass or acetone-resistant plastic container. To prepare 4 ml, add the following in the order indicated and place at  $-20^{\circ}\text{C}$  for at least 3 hours prior to starting immunoassay.
  - 1.2 ml PBS
  - 1.0 ml 37% formaldehyde solution
  - 1.8 ml acetone
- **Tween 20** (Sigma, Cat. No. P9416)
- **Microtiter plates** (tissue culture grade; clear plastic)
- **Pipette tips** (standard and gel loading tips), **pipettors** and **multichannel pipettor**
- **BacPAK™ Complete Medium** (Cat. No. 631403) or TNM-FH medium supplemented with 10% FBS and antibiotics

## IV. Rapid Titer Assay Protocol

**PLEASE READ ENTIRE PROTOCOL BEFORE STARTING.**

### A. General Considerations

- Use standard cell culture microtiter plates.
- Always perform replicates of each viral dilution to minimize the variation of individual samples.
- After the cells are fixed to the plate, we recommend you shake out reagents over the sink instead of aspirating them. This technique gives better results because it limits the amount of cell scraping.

### B. Assay Set up and Infection

1. Seed one row (12 wells) of a 96-well microtiter plate with early log phase Sf21 or Sf9 cells ( $6.5 \times 10^4$  cells/well). Label wells as shown in Figure 2. The density of early log phase cells used for the viral infection in Step 3 should be  $3-4 \times 10^5$  cells/ml.

**Notes:**

- You should include one extra row for the Control Baculovirus as a positive control.
  - Control Baculovirus stock should give clearly visible foci of infection at a  $10^{-5}$  dilution.
2. Incubate the plate in a sealed plastic bag containing a moist towel at  $27^\circ\text{C}$  for 1 hr.
  3. Make serial dilutions of the virus sample(s) by adding 100  $\mu\text{l}$  of virus stock to 900  $\mu\text{l}$  of BacPAK Complete Medium (or TNM-FH + 10% FBS) to give final dilutions of  $10^{-3}$ ,  $10^{-4}$ , and  $10^{-5}$ . Mix thoroughly between dilutions.  
These dilutions are appropriate for virus stocks with titers around  $10^8$  pfu/ml. Adjust the dilutions if the expected titer is not in this range.
  4. Carefully aspirate the medium from microtiter plate using a multichannel pipettor with gel loading tips. Take care not to scrape the bottom of the wells.
  5. Add 25  $\mu\text{l}$  aliquots of the viral dilutions to the appropriate wells (3 wells for  $10^{-3}$ ; 4 wells for  $10^{-4}$  and  $10^{-5}$ ). Add 25  $\mu\text{l}$  of medium to the negative control well. Gently rock the plate to evenly distribute the virus.
  6. Incubate for 1 hr at room temperature in a sealed plastic bag containing a moist towel.
  7. Aspirate inoculum as in Step 4 above. Be careful not to scrape the cells from the bottom of the wells.
  8. Add 50  $\mu\text{l}$  Methyl Cellulose Overlay, wrap microtiter plate in a moist paper towel, and incubate in a sealed plastic bag at  $27^\circ\text{C}$  for 43–47 hr.

## IV. Rapid Titer Assay Protocol *continued*

### C. Virus Detection

Before beginning the assay, prepare the following reagents. All volumes are sufficient for one assay (12 wells); for multiple assays, increase volumes accordingly.

- PBS + 0.05 % Tween 20:

25 ml PBS

12.5 µl Tween 20

- Diluted Normal Goat Serum:

80 µl concentrated serum

2.3 ml PBS + 0.05% Tween 20

- Mouse gp64 Antibody:

2.5 µl gp64 antibody

497.5 µl Diluted Normal Goat Serum

- Goat Anti-mouse Antibody/HRP Conjugate:

4 µl anti-mouse conjugate

996 µl Diluted Normal Goat Serum

Mix thoroughly.

- 4 ml of ice-cold formyl buffered acetone (see Additional Materials Required).

1. Carefully add 150 µl of freshly prepared ice-cold formyl buffered acetone to each well containing the methyl cellulose overlay and incubate for 10 min at room temperature.
2. Shake reagent out in the sink. Tap plate lightly on paper towel and wash 3X with 200 µl PBS + 0.05% Tween 20 (5 min per wash).
3. Add 50 µl diluted Normal Goat Serum. Incubate on shaker for 5 min at room temperature.
4. Shake out reagents in sink, tap plate lightly on paper towel. **Do not wash.**
5. Add 25 µl diluted Mouse gp64 Antibody and incubate at 37°C for 25 min.
6. Shake out the plate in sink. Tap plate lightly on a paper towel, and wash 2X with 200 µl PBS + 0.05% Tween 20 (5 min per wash with shaking).
7. Add 50 µl diluted Goat Anti-mouse Antibody/HRP Conjugate and incubate for 25 min at 37°C.
8. Shake out the plate in sink. Tap plate lightly on paper towel, and wash 3X with 200 µl PBS + 0.05% Tween 20 (5 min per wash with shaking).
9. Add 50 µl Blue Peroxidase Substrate and incubate for 3 hr at room

#### IV. Rapid Titer Assay Protocol *continued*

temperature. You can obtain a preliminary but less accurate estimate of viral titer as early as 10 min after adding the substrate.

##### D. Determining Virus Titer

1. Use light microscopy to count stained foci of infection in the highest dilution wells containing a reasonable number of foci (~5–25). Count each discrete cluster of stained cells as one focus (4–30 cells).
2. Determine the average number of foci per well for all the wells at that dilution. You will obtain the best results when the average number of foci per well is 5–25.
3. Multiply the average number of foci by the corresponding dilution factor and an inoculum volume normalization factor of 40 to determine the virus titer in focus forming units per ml (ffu/ml).
4. Multiply the result by 2 to convert ffu/ml to pfu/ml. This conversion factor was empirically determined to yield titer values corresponding to values obtained by plaque or endpoint dilution assays.

Virus titer (pfu/ml) =

average no. of foci per well x dilution factor x 40 x 2

Sample calculation:

$$15 \text{ foci} \times (10^{-5})^{-1} \times 40 \times 2 = 1.2 \times 10^8 \text{ pfu/ml.}$$

5. There may be an occasional well with no foci. This is to be expected given the variability of this assay and does not mean that you have performed the experiment incorrectly. As long as foci are counted in multiple wells at each dilution, you will get a reliable and reproducible measure of titer.



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## V. References

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BacPAK Baculovirus Rapid Titer Kit (July 1997) Clontechiques XII(3):8-9.

Kitts, P. A. (July 1992) Clontechiques VII(3):1-6.

Kitts, P. A. & Possee, R. D. (1993) A method for producing recombinant baculovirus expression vectors at high frequency. *BioTechniques* 14(5):810-817.

Luckow, V. A. (1993) Baculovirus systems for the expression of human gene products. *Curr. Opin. Biotechnol.* 4:564-572.

Miller, L. K. (1993) Baculoviruses: high-level expression in insect cells. *Curr. Opin. Genet. Devel.* 3:97-101.

O'Reilly, D. R., Miller, L. K. & Luckow, V. A. (1992) *Baculovirus Expression Vectors: A Laboratory Manual* (W. H. Freeman & Co., NY).

Volkman, L. E. & Goldsmith, P. A. (1982) *Appl. Envir. Microbiol.* 44:227-233.

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## VI. Related Products

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<b><u>Product</u></b>	<b><u>Cat. No</u></b>
• BacPAK™ Baculovirus Expression System	631402
• BacPAK6™ DNA (Bsu36 I digest)	631401
• BacPAK™ Complete Medium	631403
• BacPAK™ Grace's Basic Medium	631404
• pLP-BacPAK9 Acceptor Vector	631406
• pLP-BacPAK9-6xHN Acceptor Vector	631408

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### BacPAK™ Baculovirus Expression System

- Express proteins at high levels—1 to 500 mg of protein per liter of culture
- Retain the biological activity of expressed proteins
- High recombinant efficiency
- Vectors compatible with Creator™ technology are available

The BacPAK™ Baculovirus Expression System expresses recombinant proteins at extremely high levels in insect host cells (1, 2). The BacPAK™ System offers three major advantages:

- High yield of recombinant protein. The insect host cells produce large amounts of your target protein.
- Greater similarity to naturally occurring proteins. The expressed recombinant protein is usually similar in structure, biological activity, and immunological reactivity to the naturally occurring protein because insect host cells provide post-translational processing similar to that of mammalian cells.
- High recombination efficiency. More than 90% of the viruses produced by the transfected cells carry the target protein. The specially designed BacPAK6™ Viral DNA forces recombination between the virus and transfer vector, resulting in high recombination efficiency.

#### BacPAK™ method

The target gene is inserted into a shuttle vector, which is cotransfected into insect host cells with the linearized BacPAK6 Viral DNA. The BacPAK6 DNA is missing an essential portion of the baculovirus genome. When the DNA recombines with the vector, the essential element is restored and the target gene is transferred to the baculovirus genome. Following recombination, a few viral plaques are picked and purified, and the recombinant phenotype is verified. The newly isolated recombinant virus can then be amplified and used to infect insect cell cultures to produce large amounts of the desired protein.

The BacPAK System includes the transfer vectors, BacPAK6 Viral DNA, the insect host cells needed for production

#### Contents

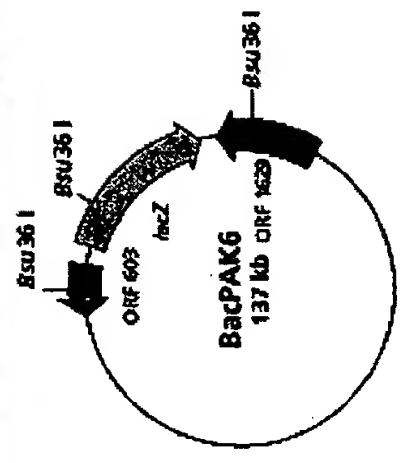
- pBacPAK8 Transfer Vector
- pBacPAK9 Transfer Vector
- BacPAK6 Viral DNA (*Bsu*36 I digest)
- Bacfectin Transfection Reagent
- IPLB-Sf21 *Spodoptera frugiperda* Cells
- BacPAK6 Virus Stock (positive control)
- AcMNPV Wild-Type Virus (negative control)
- Bac1 Sequencing/PCR Primer
- Bac2 Sequencing/PCR Primer

pBacPAK8-GUS Positive Control Transfer Vector  
User Manual (PT1260-1)  
Protocol-at-a-Glance (PT1260-2)

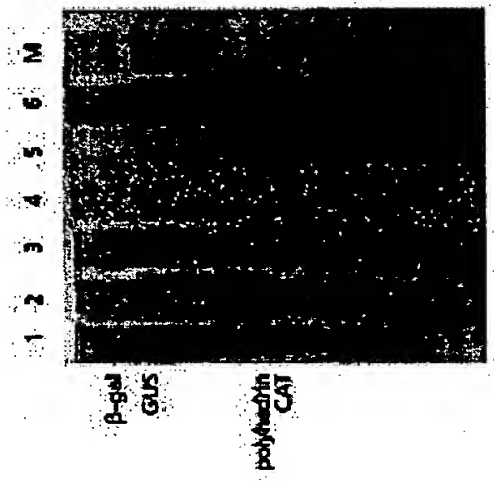
**Preparation and Storage**  
-180°C for IPLB-Sf21 Insect Host Cells  
4°C for all other components

**References**

1. Kitts, P. A. & Possee, R. D. (1993) *BioTechniques* 14(5):810-817.
2. Kitts, P. A., et al. (1990) *Nucleic Acids Res.* 18:5667-5672.



BacPAK6™ Viral DNA map.



**Protein production from recombinant viruses generated using the BacPAK™ Baculovirus Expression System.** Recombinant viruses were obtained by cotransfection of transfer vectors with BacPAK6 Viral DNA (*Bsu36 I* digest), followed by amplification in Sf21 cells. The SDS PAGE analysis of cellular lysates was performed 48 hr after infection of the Sf21 cultures. Lane 1: uninfected Sf21 cells. Lane 2: Sf21 cells infected with wild-type AcMNPV virus. Lane 3: Sf21 cells infected with nonrecombinant BacPAK6 virus. Lane 4: Sf21 cells infected with BacPAK8-GUS recombinant virus. Lane 5: purified CAT protein. Lane 6: Sf21 cells infected with BacPAK9-CAT recombinant virus. Lane M: molecular weight marker.



Name	Size	Cat. No.	Price	NFP Price	Sho
BacPAK Baculovirus Expression System	each	631402	\$646	\$646	<del>646</del>
BacPAK6 DNA (Bsu36 I digest)	5 transfxns	631401	\$395	\$395	<del>395</del>
pLP-BacPAK9 Acceptor Vector	20 µg	631407	\$370	\$370	<del>370</del>
pLP-BacPAK9-6xHN Acceptor Vector	20 µg	631408	\$370	\$370	<del>370</del>

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